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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/785,675 | 02/24/2004 | Kevin M. Graham | 10813-02 | 8395 |

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| EXAMINER | |
|---|---|
| GOINS, DAVETTA WOODS | |
| **ART UNIT** | **PAPER NUMBER** |
| 2632 | |

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/785,675 | GRAHAM, KEVIN M. | |
| | Examiner | Art Unit | |
| | Davetta W. Goins | 2632 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *7-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. Claim 7 is objected to because of the following informalities:

In line 6, the words "the motion detector" should be changed to "each motion detector" to refer to the "motion detectors" claimed on line 3. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballinger (US Pat. 5,924,652) in view of Nickell et al. (US Pat. 6,323,785 B1).

In reference to claim 7, Ballinger discloses a) the claimed set of motion detectors detecting movement of a train toward and away form a crossing site, which is met by a first pair of leads 18 and a second pair of leads 20 including a motion detector for sensing an approaching train to an island section (crossing) to cause a warning system 44 to be actuated as well as motion detected once the train has left the island section to deactivate the warning system 44 (col. 3, lines 53-67; col. 4, lines 1-67; col. 5, lines 1-15), b) the claimed warning signal devices at the crossing site, the motion detectors communicating with the warning signal devices to activate them and warn approaching motorists when a train approaches the crossing site, which is met by

warning system devices 44 in communication with the motion detector leads 18 and 20 (col. 4, lines 1-53), and c) the claimed presence detector at the crossing site detecting a train obstructing the crossing, the presence detector communicating with the warning signal devices to prevent deactivation of the warning signal devices when a train blocks the crossing site, which is met by the system including an island detector within the island section (crossing) to determine whether the train is still within the island section (col. 4, lines 37-60). Although Ballinger does not specifically disclose the claimed motion detectors are Doppler radar transmitters, he does disclose a pair of leads 18 and a second pair of leads 20 used to detect motion of the train on the track (col. 3, lines 53-65). Nickell discloses a warning system for a railroad including a slave sensor 120 located on the track, using Doppler microwave sensor, detects the presence and direction of the train. The sensor unit 120includes a transmitter to transmit a signal to a remote unit 40 to allow nearby work crew members that a train is approaching (col. 4, lines 26-63). Since Ballinger discloses a system that detects motion of a train on a track at various locations to determine when to operate a warning system located at the crossing of a track, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using Doppler radar transmitters, as disclosed by Nickell, as a type of motion detector that uses frequency levels that may be a more accurate way of detecting a specific level of motion that is needed prior to determining whether to activate or deactivate the warning signal.

In reference to claims 10, 11, Ballinger discloses a radar and receiver motion detection unit positioned remotely from a crossing site and able to sense a train traveling from the motion

detection unit to the crossing site, which is met by a first pair of leads 18 and a second pair of leads 20 including a motion detector for sensing an approaching train to an island section (crossing) to cause a warning system 44 to be actuated as well as motion detected once the train has left the island section to deactivate the warning system 44 (col. 3, lines 53-67; col. 4, lines 1-67; col. 5, lines 1-15), b) the claimed warning signal devices at the crossing site to warn motorists of an approaching train, the motion detectors communicating with the warning signal devices to activate them and warn approaching motorists when a train approaches the crossing site, which is met by warning system devices 44 in communication with the motion detector leads 18 and 20 (col. 4, lines 1-53), c) the claimed transmission logic device controlling of warning activation to the warning signal devices, which is met by system control unit 12 (Figure 1), and d) the claimed presence detection unit located adjacent the crossing site and able to detect the presence of a train stopped on the tracks and deactivate the warning signal devices, which is met by the system including an island detector within the island section (crossing) to determine whether the train is still within the island section. The control unit 12 determines, based on a pulse voltage level reaches a specific threshold, that the train has left the island section (col. 4, lines 37-60). Although Ballinger does not disclose the claimed system includes wireless transmission of the logic device controller, he does disclose a control unit 12 that communicates with both the first pair of leads 18 as well as the second pair of leads 20 on each side of the island section for determining whether to operate the warning gates 44 (col. 3, lines 53-67; col. 4, lines 1-20). Nickell discloses a warning system for a railroad including a slave sensor 120, located on the track, detects the presence and direction of the train. The sensor unit 120 includes a transmitter to transmit a "wireless" signal.to a remote unit 40 to allow nearby work crew

members that a train is approaching (col. 4, lines 26-63). Since Ballinger discloses a system that detects motion of a train on a track at various locations and transmit a signal to a warning system located at the crossing of a track, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using a wireless logic transmission logic device, as disclosed by Nickell, with the system of Ballinger, to allow portability of the system which will allow the sensors and control unit to be placed at any location on the track.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballinger in view of Nickell et al. as applied to claim 1 above, and further in view of Pace (US Pat. 5,954,299).

In reference to claims 8, 9, although Ballinger does not specifically disclose the claimed solar panels used to power the movement detection units or entire system, he does discloses a pulse generator 34 is shown in detail in FIG. 2. An isolated direct current power supply (not shown) delivers 51 volts DC to power terminals 60 to which the circuitry of pulse generator 34 is connected (col. 5, lines 16-29). Pace discloses solar panels 40 with rechargeable batteries used to operate the warning system on a railroad track (col. 4, lines 48-60). Since it is well known in the art to use solar power to provide power to operate a warning system, such as the system of Pace, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of using solar panels with the combined systems of Ballinger and Nickell, to conserve power and ensure that power will be supplied even if a power outage were to take place.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Applicant's arguments with respect to the previous claims prior to the amendment have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davetta W. Goins whose telephone number is 571-272-2957. The examiner can normally be reached on Mon-Fri with every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davetta W. Goins
Primary Examiner
Art Unit 2632

D.W.G.
March 7, 2006